

## SECTION 02930

### LAWNS AND GRASSES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Provide labor, materials and equipment required to complete loaming, fine grading, liming, fertilizing, and seeding .

##### 1.02 QUALITY ASSURANCE

- A. Qualifications of Workmen: Provide at least one person who shall be present during execution of this portion of the Work, be thoroughly familiar with the type of materials being installed and the best methods for their installation, and direct work performed under this Section.
- B. Standards:
  - 1. Planting material shall meet or exceed the specifications of Federal and State laws requiring inspection for plant disease and insect control.
  - 2. Quality shall conform with the current edition of "Horticultural Standards" for number one grade nursery stock, as adopted by the American Association of Nurserymen.

##### 1.03 SUBMITTALS

- A. Materials List: Before materials are delivered to the job site, submit to the Architect a complete list of seeding, mulching, soil amendments, and other items proposed to be installed.
  - 1. Include complete data on source, size and quality.
  - 2. Demonstrate complete conformance with the requirements of this Section.
  - 3. This shall in no way be construed as permitting substitution for specific items described in the Drawings or these Specifications unless the substitution has been approved in advance by the Architect.
- B. Submit copies of all soil test reports; including initial and final testings.
- C. Certificates:
  - 1. Certificates required by law shall accompany shipments.
  - 2. Prior to installation, deliver certificates to the Architect.

##### 1.04 PRODUCT HANDLING

- A. Delivery and Storage:
  - 1. Deliver items to the site in their original containers with labels intact and legible at time of Architect's inspection.
  - 2. Immediately remove from the site seeding materials which are not true to name and materials which do not comply with the provisions of this Section of these Specifications.
  - 3. Protect seeding materials before, during and after installation and to protect the installed work and materials of other trades.
- B. Replacements: In the event of damage or rejection, immediately make repairs and replacements necessary to the approval of the Architect, at no additional cost to the Owner.

##### 1.05 PLANTING TIME

- A. Seeding: Seeding shall be done between August 15th to September 15th and/or April 15th to June 15th.

- B. Variance: If special conditions exist which may warrant a variance in the above planting dates, a written request shall be submitted to the Architect stating the special conditions for the proposed variance. Permission for the variance will be given if warranted in the opinion of the Architect. Regardless of the time of seeding, the Contractor shall be responsible for a full growth of grass.
- C. Place permanent soil stabilization within 15 days of final grading.

PART 2 PRODUCTS

2.01 TOPSOIL

- A. General: Topsoil, except that existing on the site, will not be made available by the Owner. The Contractor shall be responsible for supplying any additional topsoil needed and hauling it to the site. It shall be obtained from naturally well-drained areas. Whether from on-site or off-site source, the topsoil shall be a fertile, friable natural loam containing no less than 7% nor more than 15% organic matter, by weight. The pH of the soil shall be between 6 and 7 and shall not contain soluble salts greater than 500 parts per million. It shall not contain toxic substances which may be harmful to plant growth. Topsoil shall be without admixture of subsoil and shall be cleaned and free from clay lumps, stones, stumps, roots, or similar substances 3/4-inch or more in diameter, debris, or other objects which might be a hindrance to planting operations. Soil shall not be used for planting while in frozen or muddy condition. Furnish all topsoil required to complete the work. Materials removed shall be disposed of by the Contractor.
- B. Maximum particle size of 3/4-inch, with maximum of 3% retained on the 1/4-inch mesh sieve. Composition in the following range:
 

Silt	15 to 40%
Sand	30 to 70%
Clay	3 to 15%
- C. Initial Testing: Take representative samples of topsoil from the site and from borrow sources and submit samples to a Soil Testing Laboratory for chemical and physical analysis. Each sample shall be made by combining 10 small grab samples from throughout the source. Indicate to the testing agencies that turf is to be planted and the name of the Owner. Forward to the Architect two copies of analysis and recommendations of the testing agencies.
- D. Final Testing: After the final topsoil has been amended and mixed as recommended, take representative samples and submit them to a Soil Testing Laboratory for chemical and physical analysis. Each sample shall be made by combining 10 small grab samples from throughout the source. Make final amendments to the topsoil to meet the specification, based on the test results. Forward to the Architect two copies of analysis and recommendations of the testing agencies.

2.02 FERTILIZER

- A. Starter Fertilizer: shall be a commercial balanced fertilizer (18-24-12), delivered to the site in bags labeled with manufacturer's guaranteed analysis. Approximately 30% to 50% of the fertilizer shall be a slow release form (UF IDBU SCU).
- B. Fertilizer shall be mixed, as specified, and delivered to the site in standard, unopened containers showing weight, guaranteed analysis, and name of manufacturer.
- C. Special Protection: If stored at the site, protect fertilizer from the elements.

2.03 SOIL AMENDMENTS

- A. Peat: Peat shall be moist. It shall be finely shredded, consist of 90 percent organic moss peat, be brown in color, and suitable for horticultural purposes. Shredded particles shall not exceed one (1) inch in diameter. Peat shall be measured in air dry condition, containing not more than 35 percent moisture by weight. Ash content shall not exceed 10 percent.
  
- B. Compost: Compost shall meet Maine Department of Environmental Protection rules and guidelines and must be approved for commercial landscaping. Vendor shall provide approximate nitrogen availability calculations for soil blending and complete set of available plant nutrients, pH, trace metals, total volatile solids, soluble salts, measured water holding capacity and maturity measurements. Compost shall be weed seed free and consist of approximately equal portions of municipal bio-solids, short paper fiber, wood ash and sawdust and be the product of 15 days of thermophilic aerobic decomposition followed by 90 days of curing. Compost will be adequately stabilized, pathogen free with acceptable odor. The material shall pass through a 3/8" mesh screen, be friable and free of stones, sticks and all objectionable debris. Compost source is subject to the review of the Engineer.

Compost Parameters:

C:N Ratio	20:1 - 35:1
Total Nitrogen	<1.5%
Maturity Index	Stable - Very Stable
Texture	100% passing 3/8" screen
Soluble Salts	<4 mmhos/cm
Moisture Content	40-60%
Total Volatile Solids	<60%
Density	800 - 1200 lbs./cy

Earth Life Products Compost from New England Organics, Falmouth, Maine, or approved equal.

- C. Limestone: Ground dolomitic limestone shall be an approved agricultural limestone and shall contain not less than 85 percent of total carbonates with a minimum of 30% magnesium carbonates. Limestone shall be ground to such fineness that 50 percent will pass a 100 mesh sieve, and 90 percent will pass a 20 mesh sieve.

2.04 GRASS SEED

- A. General: Grass seed shall be:
  - 1. Free from noxious weed seeds and re-cleaned.
  - 2. Grade A recent crop seed.
  - 3. Treated with appropriate fungicide at time of mixing.
  - 4. Delivered to the site in sealed containers with dealer's guaranteed analysis.
  - 5. Each variety of seed shall have percentages of germination of not less than 80%, and a percentage of purity of not less than 85%.

B. Seed Mix Proportions by Weight:

<u>Description</u>	<u>Kind of Grass</u>	<u>Proportion by Weight</u>
Sportsfield Seed	-Kentucky Bluegrass- (50/50 mix of two of the following cultivars) "Northstar, Bartita, Dragon, or Eclipse"	50%
	-Perennial Rye - (50/50 mix of two of the following cultivars) "Palmer III, Prelude, Secretariat, or Brightstar II"	50%
General Lawn Areas	Chewing Fescue "Dignity"	35%
	Pennlawn Creeping Red Fescue	35%
	Perennial Rye "Tourstar" (Nutrite)	30%

- C. Weed seed content shall not exceed 0.25 percent. Wet, moldy, or otherwise damaged seed will be rejected.

2.05 MULCH

- A. Mulch shall consist of long fibered hay or straw, reasonably free from noxious weeds or other undesirable material. No material shall be used which is so wet, decayed, or compacted as to inhibit even and uniform spreading. No chopped hay, grass clippings or other short fibered material shall be used unless directed.

2.06 EROSION CONTROL MESH

- A. Open weave jute mesh of loosely twisted construction averaging 1.22 pounds per linear yard, or excelsior blanket material.
- B. Other synthetic mesh and mulch blankets may be used if approved by the Architect.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

- A. Inspection:
1. Prior to work of this Section, carefully inspect the installed work of other trades, and verify that such work is complete to the point where this installation may properly commence.
  2. Verify that seeding may be completed in accordance with the original design and the referenced standards.

3.02 SUBGRADE PREPARATION

- A. The Contractor shall do whatever grading is necessary to bring the subgrade to a true, smooth slope, parallel and at the depth shown on the Drawings below finished grade, for seed bed areas.
- B. There must be sufficient grade staked to insure correct line and grade of subgrade and of finished grade.
- C. Immediately prior to being covered with topsoil, the top 3" to 6" of the subgrade shall be raked or otherwise loosened and shall be free of stones, rock and other foreign material 1-1/2" or greater in

dimensions.

### 3.03 FINISH GRADE PREPARATION

- A. Topsoil shall not be delivered or worked in a frozen or muddy condition.
- B. Place and spread topsoil over approved areas to a depth sufficiently greater than shown on the Drawings in "loam and seed" lawn areas and in plant bed areas so that after natural settlement and light rolling, the completed work will conform to the lines, grades, and elevations indicated.
- C. After topsoil has been spread in approved areas, it shall be carefully prepared by scarifying or harrowing, and stones over one inch in diameter shall be removed from the topsoil. It shall be free of smaller stones in excessive quantities, as determined by the Architect.
- D. The whole surface shall then be rolled with a roller which weighs not more than 100 pounds per foot of width. During the rolling, all depressions caused by settlement of rolling shall be filled with additional topsoil, and the surface shall be regraded and rolled until presenting a smooth and even finish to the required grade.

### 3.04 SEED BED PREPARATION

- A. After the areas to be seeded have been brought to the grades specified, spread limestone at a rate of 100 pounds minimum per 1,000 square feet, or as recommended by soil testing agencies.
- B. Apply starter fertilizer at a rate of 15# per 1000 sq. ft. just prior to final grading of the site. Thoroughly and evenly incorporate fertilizer and lime with the soil to a depth of 3" by discing or other approved method. In areas inaccessible to power equipment, use hand tools. Adjacent to trees and shrubs use hand tools to avoid disturbance of the roots. Provide a second application of starter fertilizer at a rate of 6# per 1000 sq.ft. approximately 2 weeks after seedling emergence.
- C. Reconstitute the soil, as may be recommended by a soil testing agency, prior to use as planting soil. Any deficiencies in the topsoil shall be corrected by the Contractor, as recommended, at no expense to the Owner.
- D. After incorporation of fertilizer and lime into the soil, the seed bed shall be fine graded to remove all ridges and depressions and the surface cleared of all debris and of all stones one inch or more in diameter.

### 3.05 SEEDING

- A. Immediately before seeding, the ground shall be restored, as necessary, to a loose friable condition by discing or other approved method to a depth of not less than 2". The surface shall be cleared of all debris and of all stones 1" or more in diameter.
- B. Seed with specified grass seed, sowing evenly with a Brillion seeder or other approved mechanical seeder at the rate of 5 pounds per 1,000 square feet. Sow 50% in one direction and 50% at right angles to the first seeding. Spread seed when soil is moist. Cultipacker, or approved similar equipment, may be used to cover the seed and to firm the seed bed in one operation. In areas inaccessible to cultipacker, the seeded ground shall be lightly raked and rolled in two directions with a water ballast roller. Extreme care shall be taken during seeding and raking to insure that no change shall occur in the finished grades and that the seed is not raked from one spot to another.
- C. Hydro-seeding may be used for general lawn areas and low maintenance areas, but not for sportsfields. Certify in writing that the hydro-seed fertilizer mix is as herein specified and applied at the equivalent rate.
- D. Promptly after seeding, wet the seed bed thoroughly, keeping all areas moist throughout the germination

period.

- E. Mulch shall be placed immediately after seeding. Hay that has been thoroughly fluffed shall be spread evenly and uniformly at the rate of two to three tons per acre. Lumps and thick mulch materials shall be thinned. Anchor hay mulch with erosion control mesh on slopes steeper than 6 horizontal to one vertical (16%) and as necessary to prevent movement. Anchor mesh as recommended by manufacturer. Hydromulching is an acceptable method of mulching. The mulch shall consist of natural cellulose wood fibre containing no materials which will inhibit seed germination or plant growth. Sufficient non-toxic water soluble green dye shall be added to provide a definite color contrast to the ground surface to aid in even distribution. Wood fibre mulch shall be supplied in uniform packages not exceeding 100 pounds each. Each package shall be marked to show the air dry weight.
- F. Take whatever measures are necessary to protect the seeded area while it is germinating. These measures shall include furnishing warnings signs, barriers, and other needed measures of protection.

### 3.06 MAINTENANCE

- A. Maintenance shall begin immediately after seeding operations and shall continue until Project Substantial Completion or for a minimum of 60 days, whichever is longer.
- B. Maintenance of seed areas shall consist of watering, weeding, curing, repair of all erosion, and reseeded as necessary to establish a uniform stand of grass. Lawns shall be watered in a satisfactory manner during and immediately after planting, and not less than twice per week until Project Substantial Completion [Provisional Acceptance]. Areas which fail to show a uniform stand of grass for any reason shall be reseeded repeatedly until a uniform stand is attained. Scattered bare spots approximately 8" in size, evenly distributed in any lawn area, will be allowed at the discretion of the Architect.
- C. At the time of the first cutting, there shall be a uniform stand between 3 and 3-1/2" high, and mower blades shall be set between 2-1/2" and 3" high. Provide at least 3 cuttings of grass in lawn areas not closer than 10 days apart. Catch shall be representative of seed specified.
- D. Correct graded areas which settle during the first 12 months after Project Substantial Completion in lawn areas, including loaming and seeding. Reseeding shall be done as herein specified.

### 3.07 ACCEPTANCE IN PART

- A. The work may be accepted in parts when it is deemed to be in the Owner's best interest to do so and when approval is given to the Contractor in writing to complete the work in parts. Acceptance and use of such areas by the Owner shall not waive any other provisions of this Contract.

### 3.08 CLEAN-UP

- A. When this work is done while buildings are occupied, pavements shall be kept broom cleaned to prevent tracking dirt into buildings.
- B. After completion of planting operations, dispose of debris and excess material to the satisfaction of the Architect. Pavements shall be broomed and hosed clean.

### 3.09 FINAL INSPECTION AND ACCEPTANCE

- A. At the end of the guarantee period, the Architect will inspect guaranteed work for the Final Acceptance upon written request of the Contractor. The request shall be received at least 10 calendar days before the anticipated date for final inspection.
- B. Upon completion and reinspection of repairs or renewals necessary in the judgement of the Architect at that time, he shall certify in writing to the Contractor as to the Final Acceptance of the project.

END OF SECTION

